Measuring Second Language Vocabulary Acquisition

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Introduction

Much of the literature on second language acquisition as a general process (e.g. Mitchell & Myles, 2004; Lightbown & Spada, 1999) pays little attention to vocabulary learning. This is not just a recent phenomenon. O'Dell (1997: 258) comments that vocabulary and lexis are absent from major books on the syllabus and theory of language teaching throughout the 1970s and 1980s. Its omission may have an even longer history. Wilkins (1972: 109), writing at the beginning of the 1970s, suggests it dates from the development of structural linguistics. For much of the last half century or so, therefore, the consideration of vocabulary in the process of language learning, testing and teaching appears to have been sidelined and, as Meara (1980) describes it, turned into a Cinderella subject.

I think there are three reasons for this. One is a product of the structural and other approaches to language teaching that have become highly pervasive in language teaching. Outside the arena of specialist vocabulary studies there seems to be a long-standing idea that words are just words, and that learning words is unsystematic. Vocabulary is unchallenging as a pedagogical or an academic issue, as a consequence. In structural approaches to learning, the part of language learning which is really important is how language rules and systems are acquired, and with this approach we need not be too concerned about the words to which these rules and systems apply. It is assumed that these rules would develop regardless of which words, or how many words, were being used to form them. Commonly, a structural linguistic approach to teaching deliberately reduces the volume of vocabulary input at the earliest stages of learning to only what is necessary for the presentation of language structures, or what is essential to motivate learners. So powerful has this approach been, that it has pervaded later approaches where a greater emphasis on vocabulary ought to be apparent. Notional-functional and, in the UK, communicative approaches have likewise seen vocabulary learning sidelined.

The second reason is the persistent belief among teachers, learners and educational administrators, that it is possible to become highly proficient in a foreign language, and even a sophisticated user, with only very limited vocabulary resources. I am constantly surprised, for example, by the number of teachers who quote Ogden's (1930) *Simple English* at me, apparently in all seriousness, and are under the

impression that they can teach a complete western European language with only 850 words. Ogden's *Simple English* even continues to crop up in the most recent academic literature, for example in Häcker's (2008) examination of the vocabulary loading of German course books. While Häcker recognises that Ogden's 850 words cannot form a fully communicative lexicon for a modern European language, the idea that it can do so is widespread and even occurs in otherwise reputable media. A recent BBC news article by Alex Kirby (2004), for example, suggested that since only 'about 100 words are needed for half of all reading in English' it would follow that a parrot with 950 words should cope 'with a wide range of [English] material'. Ogden's work, and structural linguistics, pre-date modern corpus analysis that gives a much better idea of the kind of vocabulary resources that learners need. These can tell us about the occurrence and frequency of words in language, and this provides reliable information on which words, and how many, are really used by normal speakers. It turns out that thousands of words are needed even for basic communication, let alone for fluency. But the idea that teaching modern foreign languages requires only a handful of words persists, probably because it is also a product of wishful thinking. Learning a language is an enormous task. To perform like a native speaker you need to learn thousands of words. You need to discover which words can be combined and which cannot, and master many rules of language. It can take years of effort to achieve even basic levels of command and understanding. Teachers have to try to fit all of this into a restricted timetable and maintain the motivation of learners at all times. Everyone would like to believe that you can reduce the burden of learning to something much smaller, say, a few hundred words instead of many thousands, and still achieve worthwhile results.

The third reason is the widely held belief that time spent in explicit vocabulary teaching is wasted because 'few words are retained from those which are ''learned'' or ''taught'' by direct instruction' (Harris & Snow, 2004: 55), and 'most L2 vocabulary is learned incidentally, much of it from oral input' (Ellis, R., 1994: 24). The best way to deal with vocabulary, therefore, is not to teach it at all because learners will soak it up as though by osmosis from the language which surrounds them inside or outside class. This is also wishful thinking. The evidence suggests that the vocabulary uptake from truly incidental language exposure is usually negligible and that successful learners acquire large volumes of vocabulary from the words explicitly taught in the classroom and supplement their learning by targeting vocabulary in activities, like learning the words of songs, outside of class.

Too often, it seems, wishful thinking and time restrictions seem to outweigh hard evidence in the construction of teaching syllabuses and in teaching practice.

While the study of vocabulary has recently become much more fashionable at an academic level, this interest has yet to transfer itself to the foreign language teaching mainstream. The most recent manifestation of the Common European Framework of Reference for Languages (The Council of Europe, 2001), for example, has omitted its early work on vocabulary lists, and concentrates on descriptions of skills and knowledge, almost entirely free of vocabulary. Suites of exams, such as UCLES's First Certificate in English and Proficiency in English, retain specific papers on Use of English, which concentrate on knowledge of language structures, but have no equivalent papers on vocabulary knowledge. This knowledge must be assessed coincidentally through skills assessment in reading, speaking and writing. In the UK, our national Centre for Information on Learning and Teaching recently hosted a seminar 'steering teachers away from the dangers of purely vocabulary based teaching and towards a methodology that focuses on the development of skills and transferable language'. The implication is that an emphasis on vocabulary is still thought to be damaging to learners and it could and should be avoided, even where communication is the principal goal of language learning. The effect in UK schools seems to be a reduction both in the volumes of vocabulary presented to learners (Häcker, 2008) and in the volumes of vocabulary learned (Milton, 2008).

Of course, vocabulary is not an optional or unimportant part of a foreign language. Still less is it an aspect of knowledge that can be disposed of without much effect on the language being learned. Words are the building blocks of language and without them there is no language. As Wilkins succinctly notes (1972: 111), 'without grammar very little can be conveyed, without vocabulary *nothing* can be conveyed'. Recent language learning theory suggests that reducing the volumes of vocabulary acquired by learners may actually harm the development of other aspects of language; for example, word learning may actually drive the development of structural knowledge. It is possible, then, to challenge at a theoretical level the approaches to learning that sideline vocabulary or reduce it to minuscule levels. It is possible too, to use recent work on comprehension and coverage, to provide a very practical justification for teaching vocabulary in greater volumes. The measurements we have of learners' vocabulary resources challenge the myth that it is possible to be an accurate and highly communicative language user with a very small vocabulary. The measurement of second language vocabulary knowledge is not a recondite area of study, therefore, interesting only to a handful of

scholars. It should be of interest to everyone involved in the business of language education. It can help teachers and administrators set appropriate targets for learning so that learners can have the language skills that are expected. It can help teachers and learners monitor progress so they can tell whether they have achieved the kind of knowledge needed for an examination or a trip to a foreign country. It can even help academics to understand the nature of language knowledge and the learning process.

For almost 20 years, Swansea University has had a research group investigating the vocabulary of second language learners. We have devised tests to measure vocabulary knowledge, we have models of how vocabulary is learned and how it is forgotten, and we have data from many researchers in many different countries around the world. I have drawn on this huge resource in writing this book and I have tried to bring together the many disparate strands which our research students and colleagues have been working on to make a cogent whole.

The purpose of writing this book is threefold.

In the first section, it is intended to lay before the interested reader how useful measurements of vocabulary knowledge can be made. Useful measuring systems should be systematic so that results from different learners or schools or language levels can be compared. Too often in the past, researchers have used *ad hoc* tests where the results gained from one set of learners provide little insight for learners and teachers in other language teaching environments. This section will consider how to make the tests we use systematic by addressing issues such as the unit of measurement, and what knowing a word means. Vocabulary knowledge is multi-faceted and, in the current state of knowledge, no single measurement can satisfactorily encapsulate a learner's knowledge. This section will also explain, and will seek to justify, why many recently constructed tests use frequency information and concentrate their analysis on the most frequent words in language. It will examine the relationship between frequency of occurrence and learning. It will also consider the relationship between coverage, the proportion of words in a text that a learner knows, and comprehension.

The second section will explain the tests used to make measurements of vocabulary knowledge and will present some of the measurements that have been made of learners' knowledge. The intention is to provide teachers and learners with normative data against which they can begin to compare themselves or their classes, and the learning they undertake. Because vocabulary knowledge is multi-faceted, this section is broken down into some of the aspects of vocabulary knowledge that we commonly consider. These include passive vocabulary size or breadth, or the number of foreign language words a learner knows. It will include

productive vocabulary knowledge, or the number and nature of words that a learner can use to express their ideas and communicate. It will tackle areas of knowledge that are less well researched and understood, such as vocabulary depth. It will also address the levels of vocabulary knowledge that learners need to reach in order to tackle formal examinations and where this vocabulary comes from; I will argue that vocabulary levels can be built into the Common European Framework of Reference for Languages.

Finally, this book will consider how the measurements can confirm or challenge the models of language learning we use, and so allow us to refine and improve the methods and techniques we use in foreign language teaching.

Explanations and Definitions

> The intention in this chapter is to give working explanations of vocabulary and the various ways it can be measured. The chapter will not discuss every option and detail about why these measures have evolved exactly as they have, but should provide readers with an understanding of the terms used in this book. It will cover:
>
> - *What is vocabulary and what is meant by a word?*
> - *What is word knowledge?*
> - *How can vocabulary knowledge be measured?*

We live in a society where we measure things all the time: our height, our weight, our shoe size, our car speed. We do it automatically and rarely think about the units we use for measurement until, that is, the units change for some reason. For example, exactly how fast is the maximum speed limit of 120 kph on roads in continental Europe when your car (my car, at least, it's an old one) only gives miles per hour (mph) on the speedometer? In order to measure anything, therefore, we need to understand the units of measurement and use them appropriately. Measuring language, and vocabulary knowledge in particular, is no exception. Misunderstand the units, or use the wrong units, and we are likely to learn very little about the language we are trying to understand. The purpose of this opening chapter is to explain what these units of measurement are in describing vocabulary acquisition and how we set about measuring vocabulary knowledge.

Measuring language is not as easy as measuring distance or weight. Language knowledge is not a directly accessible quality and we rely on learners to display their knowledge in some way so it can be measured. If learners are tired or uninterested, or misunderstand what they are expected to do, or if we construct a test badly, then they may produce language that does not represent their knowledge. A further problem arises with the qualities of language we are interested in monitoring. Grammar, for example, does not come in conveniently sized packages that can be counted. The techniques we frequently use to elicit language from learners, such as writing an essay, provide data that are not easy to assess objectively. We tend to *grade* performance rather than *measure* it and this can lead to misinterpretation. For example, if two essays are given a mark out of 10, and one is given 8 and the other 4, this does not mean that the first learner has twice the knowledge or ability as the second, even though the mark is twice as large. The use of numbers for

grading suggests this ought to be the case, but it is not so. In these circumstances, it is hard to characterise second language knowledge and progress accurately or with any precision; it is hard to *measure* language.

One of the advantages of examining vocabulary learning in a second language is that, superficially at least, it is a quality that appears to be countable or measurable in some meaningful sense. You can count the words in a passage or estimate the number of words a learner knows, and the numbers that emerge have rather more meaning than a mark out of 10 for an essay. A passage of 400 words is twice as long as a passage of 200 words. A learner who knows 2000 words in a foreign language can be said to have twice the knowledge of a learner who knows only 1000 words. While the principle of this looks very hopeful, in reality, assessing vocabulary knowledge is not quite so easy. It is not always clear, for example, exactly what is a word, and what appears to be a simple task of counting the number of words in a text can result in several possible answers. Again, in estimating the number of words a learner knows, it is possible to come up with several definitions of knowledge, some more demanding than others, which might produce very differently sized estimates. The following sections will explain the terms that are used in measuring vocabulary knowledge and learning, and will set some ground rules for the terms used in this book.

What is Vocabulary and What is Meant by a Word?

One thing the reader will find in accessing the literature on vocabulary knowledge, is that we tend to use the word 'word', presumably for ease and convenience, when we are really referring to some very specialist definitions of the term, such as *types*, *tokens*, *lemmas*, *word families* and even the attractively named *hapax legomena*. This can be very confusing, even depressing. My undergraduate students, for example, having read that native speakers of English know something like 200,000 words (Seashore & Eckerson, 1940), are mortified to find that their vocabularies appear less than one tenth of this size when they try out Goulden *et al.*'s (1990) or Diack's (1975) vocabulary size tests. The reason is that early estimates of the vocabulary knowledge of native speakers, such as Seashore and Eckerson's, used a dictionary count where every different form of a word included in the dictionary, was counted as a different word. Words such as *know, knows* and *knowing* were all treated as different words and counted separately. Later attempts to systematise such counts and use frequency information for greater accuracy, such as that of Goulden *et al.*, include a treatment of all the common inflections and derived forms of words as a single word family. By this method, *know, knows* and *knowing* and many other similar forms are all treated as a single unit. Not surprisingly, this method of counting comes up with a